

From: [Brescia, Nicolas](#)
To: [McAteer, Mike](#)
Subject: FW: Wabasca Heavy MSDS.docx-ERT
Date: Wednesday, April 03, 2013 2:57:09 PM

[Here you go](#)

From: Stroud, Fred
Sent: Wednesday, April 03, 2013 1:24 PM
To: Powell, Greg; Ruhl, Christopher
Cc: Brescia, Nicolas
Subject: RE: Wabasca Heavy MSDS.docx-ERT

So, it is probably a good idea for Chris and Nic to have the oil fingerprinted to ensure that it is actually Wabasca heavy crude...since ExxonMobil has provided a very vague MSDS..

From: Powell, Greg
Sent: Wednesday, April 03, 2013 11:15 AM
To: Stroud, Fred; Ruhl, Christopher
Cc: Brescia, Nicolas
Subject: RE: Wabasca Heavy MSDS.docx-ERT

Greetings:

The ExxonMobil MSDS was less than informative. I am attaching the MSDS from Cenovus Energy for Wabasca Heavy crude. Wabasca oil is recovered by conventional processes(not Mining). API gravity is somewhere around 20. The very heavy oils that were in the Marshall ,Michigan spills can have a gravity less than 10. That said, both varieties of crude have a diluent added to enhance flow in the pipeline. Remember tar sands oils are weathered oils. Once the diluent volatilizes from the oil you have a heavy weathered crude to recover.

Hydrologic, geomorphic and cultural features (dams) have a distinct affect on these heavy oils behavior after volatilization. High flows and dams will tend to break up the product and you will find various sized globules being transported in the water column. Over time the oil will accumulate behind structures or in quiescent areas. Underflow structures will work during the first few weeks of the spill, but you will see reduced efficiency with time.

All crudes behave differently especially the heavy's , so be ready for surprises. This is not Uncle Jed's Texas T! A cheap and effective downstream early warning for heave crude transport is to place window screen in the water column and check for accumulation of globules.

Let me know if you need anything else.

From: Stroud, Fred
Sent: Wednesday, April 03, 2013 11:52 AM
To: Powell, Greg; Ruhl, Christopher
Cc: Brescia, Nicolas
Subject: RE: Wabasca Heavy MSDS.docx-ERT

I thought you had experience with this stuff at Enbridge?

From: Powell, Greg
Sent: Wednesday, April 03, 2013 8:42 AM
To: Stroud, Fred; Ruhl, Christopher
Cc: Brescia, Nicolas
Subject: RE: Wabasca Heavy MSDS.docx-ERT

Hi Guys:

I will look over the MSDS and compare to "other oils".

From: Stroud, Fred
Sent: Wednesday, April 03, 2013 11:34 AM
To: Ruhl, Christopher; Powell, Greg
Cc: Brescia, Nicolas
Subject: RE: Wabasca Heavy MSDS.docx-ERT
Importance: High

Chris,

I am going to forward to Greg as he has 'hands-on' experience with this type of oil.

From: Ruhl, Christopher
Sent: Wednesday, April 03, 2013 8:17 AM
To: Stroud, Fred
Cc: Brescia, Nicolas
Subject: Wabasca Heavy MSDS.docx

Fred,

We have received the following MSDS sheet for the oil that was spill in the Exxon incident in Mayflower, AR. Can you advise how we might confirm whether this is oil that was produced from the Canadian Tar Sands? Thanks